

1. A polishing head, comprising:
a housing;
a backing member to hold a substrate against a polishing pad, the backing member including an opening therein for fluid to flow into contact with the substrate and
5 press the substrate against a polishing pad; and
a retainer surrounding the backing member.
2. The polishing head of claim 1, wherein the backing member is movable relative to the housing.
- 10 3. The polishing head of claim 2, wherein the retainer is movable relative to the housing independently of the backing member.
4. The polishing head of claim 1, wherein the backing member includes an
15 edge portion configured to contact a perimeter portion of the back surface of the substrate.
5. The polishing head of claim 4, wherein the edge portion surrounds a pressurizable recess open to and facing a back surface of the substrate.
- 20 6. The polishing head of claim 5, wherein the recess covers substantially the entire back surface of the substrate.
7. The polishing head of claim 4, wherein the edge portion includes a seal
25 surrounding the recess to contact the substrate.
8. The polishing head of claim 7, wherein the seal comprises a lip seal.
9. The polishing head of claim 7, wherein the seal comprises an O-ring.
- 30 10. The polishing head of claim 1, further comprising a first chamber to provide a first downward force on the backing member.

11. The polishing head of claim 10, wherein the first chamber is positioned between the housing and the backing member.

5 12. The polishing head of claim 10, further comprising a second chamber to provide a second downward force on the retaining ring.

13. The polishing head of claim 12, further comprising an elastic member to urge the retainer away from the polishing pad.

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14. The polishing head of claim 1, wherein the retainer is configured to contact said polishing pad.

15. A method of polishing, comprising:
15 holding a substrate against a backing member in a carrier head;
positioning the substrate against a polishing surface;
directing a fluid through an opening in the backing member to press the substrate against a polishing pad;
creating relative motion between the substrate and the polishing surface; and
20 restraining the substrate from escaping the backing member with a retainer.

16. The method of claim 15, wherein holding the substrate includes applying a vacuum to the opening to chuck a substrate to the backing member.

25 17. The method of claim 15, wherein directing fluid includes directing fluid into a recess in the backing member that is open to and facing a back surface of the substrate.

18. The method of claim 17, further comprising sealing a perimeter portion of
30 the substrate against the backing member.

19. The method of claim 15, further comprising contacting the polishing pad

with the retainer.

20. The method of claim 18, further comprising controlling a pressure of the retainer against the polishing pad.

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